

TBD05 – (Part 05) Micronutrients and macronutrients

Name _____

1. B.5.1 **Outline** the difference between micronutrients and macronutrients. (2) *Micronutrients are substances required in very small amounts (mg or μg) and that mainly function as a co-factor of enzymes (<0.005% body weight). Examples include vitamins and trace minerals (Fe, Cu, F, Zn, I, Se, Mn, Mo, Cr, Co and B). Macronutrients are chemical substances that are required in relatively large amounts (>0.005% body weight). Examples include proteins, fats, carbohydrates and minerals (Na, Mg, K, Ca, P, S and Cl).*
 - a. What is a nutrient?
 - b. What is a mineral?
 - c. What are the four functions of minerals?
 - i.
 - ii.
 - iii.
 - iv.
 - d. What is the difference between micro and macro nutrients. Associate with the four functions above.
 - e. List a few macronutrients and their function
 - f. List a few micronutrients and their function
2. B.5.2 **Compare** the structures of retinol (vitamin A), calciferol (vitamin D) and ascorbic acid (vitamin C). (3)
 - a. What is a vitamin
 - b. What is the difference between fat- and water-soluble vitamins?

	Vitamin A	Vitamin C	Vitamin D
Structure			
Properties/Name/etc			
Polarity			

3. B.5.3 **Deduce** whether a vitamin is water- or fat-soluble from its structure. (3)
 - a. This is covered above
4. B.5.4 **Discuss** the causes and effects of nutrient deficiencies in different countries and suggest solutions. (3)

Micronutrient deficiencies include: blindness, pellagra, beriberi. Macronutrient deficiencies include: Some causes of malnutrition may be discussed here. Solutions include: fresh and vitamin- and mineral-rich foods, consumed foods, eating foods grown in selenium-poor soil.

 - a. What is a deficiency disease?
 - b. List some deficiency diseases and the name of the vitamin necessary to avoid and where it can be found
 - i.
 - ii.
 - iii.
 - c. What is a mineral deficiency?
 - d. List a couple mineral deficiencies and their symptoms
 - i.
 - ii.
 - iii.
 - e. What does it mean for a food to be fortified?
 - f. What is malnutrition?
 - g. Explain protein deficiencies using Kwashiorkor and Marasmus as your examples: